REMARKS/ARGUMENTS

Claims 2-5, 8-11 and 19 are pending herein. Claims 1, 6, 7 and 12-18 have been cancelled without prejudice or disclaimer. Claim 1 has been rewritten as new claim 19. Claims 2, 3, 5 and 8-11 have been amended to either depend from new claim 19 or for clarification purposes only.

1. Applicants affirm the provisional election to prosecute claims 1-13. Claims 14-18 have been withdrawn from consideration as being drawn to a non-elected invention, and thus have been cancelled without prejudice or disclaimer. Applicants reserve the right under 35 U.S.C. §121 to file a divisional application for the non-elected claims.

2. The rejections of claims 1-7 and 9-11 under §112, second paragraph and §101 are noted, but deemed moot in view of the rewritten claims submitted above.

3. Claims 1-7 were rejected under §103(a) over Vaudo et al. in view of Razeghi. This rejection is moot in light of the cancellation of claim 1. To the extent that this rejection might be applied against new claim 19 (which, as discussed above, corresponds to original claim 1 rewritten to overcome the §112, second paragraph and §101 rejections), it is respectfully traversed.

Pending independent claim 19 recites, among other things, that at least a portion of a Hydride Vapor Phase Epitaxy (HVPE) reactor that is exposed to an aluminum chloride gas during the formation of a Group III-V nitride film comprises an aluminum nitride material.

The PTO acknowledges that "Vaudo et al. does not teach the reactor is made of aluminum nitride" (see Office Action, page 5, paragraph 13). The PTO is correct in that Vaudo clearly discloses that sapphire or graphite materials, instead of quartz, should be used as the materials from which the reactor is formed. The PTO, however, appears to be arguing either that (1) skilled artisans would have been motivated to coat Vaudo's sapphire or graphite reaction chamber inner surfaces with an AlN coating as disclosed in Razeghi, or (2) skilled artisans would have been motivated to use Razeghi's A1N-coated quartz for the reactor in Vaudo (see Office Action, page

6). Applicants respectfully disagree with both positions.

Vaudo clearly teaches that sapphire or graphite materials are "alternative high temperature compatible materials" that should be used for the reactor materials in place of quartz (see column 11, lines 60-67 of Vaudo, for example). That is, the "alternative high temperature compatible materials" to which the PTO refers on page 5 of the Office Action are explicitly stated to be materials that should be used as an alternative to quartz to overcome the problems stemming from the use of a quartz reactor, such as, for example, incorporating "significant impurities into the growing films" (see col. 11, lines 60-67). As such, the PTO's apparent position of substituting Razeghi's A1N-coated quartz for the sapphire or graphite reactor in Vaudo completely flies in the face of the express teachings in Vaudo.

It is also significant that A1N is not one of the materials listed in Vaudo. Certainly that material was known, as evidenced by Razeghi, at the time Vaudo developed the alleged improvement of using sapphire or graphite as opposed to quartz. One could certainly conclude from this clear omission that Vaudo itself implicitly discloses that A1N is not suitable in Vaudo's disclosed environment.

The PTO has not provided any citations to Vaudo or Razeghi that would have motivated one to substitute any other material, let alone AlN-coated quartz, for the sapphire or graphite reactor materials disclosed in Vaudo. In particular, the PTO has not provided any showing that the materials of Razeghi would work better than the materials already employed in Vaudo. Absent a showing of some expected benefit to making the substitution asserted by the PTO, why would one skilled in the art make such a substitution? The rejection asserted by the PTO is based only upon hindsight gleaned from Applicants' own disclosure, and is thus impermissible.

In view of all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Vaudo in view of Razeghi are respectfully requested.

4. Claims 8-13 were rejected under §103(a) over Vaudo et al. in view of Razeghi and further in view of Mayeda or Kim et al. This rejection is respectfully traversed.

With reference to Fig. 4 of the present application, pending independent claim 8 recites that a double reactor structure includes an outer reactor 32 surrounding an inner reactor 31. Contrary to the PTO's position asserted on page 7 of the Office Action, skilled artisans would clearly understand that Fig. 2 of Vaudo does not disclose or even remotely suggest that an inner reactor is surrounded by an outer reactor, as claimed. Therefore, even if Vaudo and Razeghi, and Mayada or Kim were combined as asserted in the Office Action, there would still be no disclosure or suggestion of "an outer reactor surrounding the inner reactor," as recited in pending claim 8.

In view of the all of the foregoing, reconsideration and withdrawal of the §103(a) rejection over Vaudo in view of Razeghi and further in view of Mayada or Kim are respectfully requested.

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

September 30, 2003
Date

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